

Elevator Grain Explosion

Introduction

Use a gallon can with a lid to ignite an explosive demo which shows how the rates of reactions increase due to increased surface area.

STANDARD 3240-01 Students will observe and describe chemical and physical change.

OBJECTIVE

3240-0101 Differentiate between common chemical and physical changes.

3240-0102 Analyze factors that influence chemical and physical change.

INTENDED LEARNING OUTCOMES

- 1a. Make observations and measurements
- 2d. Collect and record data using procedures designed to minimize error.
- 2e. Analyze data and draw warranted inferences.



Materials:

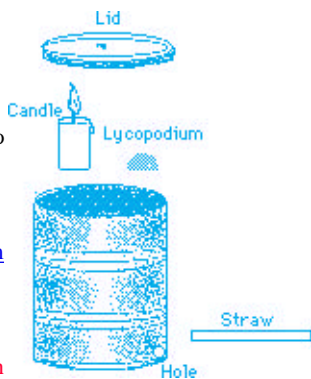
Candle
Lycopodium Powder
Matches
Gallon Tin Can with Lid
Long Straw
spoon

Preparation:

Puncture a 1/4 hole at the base of the tin can.

Procedures:

1. Place 1/2 teaspoon of Lycopodium powder onto a spoon and try to light it with a match. (A quicktime video of the "[lighting the Lycopodium in a spoon](#)" will open in a new window. Close the window when you finish viewing it to return to this page.)
2. Place the same 1/2 teaspoon of Lycopodium powder into the can next to the hole.
3. Light candle and place in can on the opposite side of the hole.
4. Place lid on can.
5. Take a deep breathe, blow into straw to create a cloud of lycopodium powder.



Be prepared for boom and a ball of flames. (A quicktime video of the "[grain explosion](#)" will open in a new window. Close the window when you finish viewing it to return to this page.)

Safety concerns:

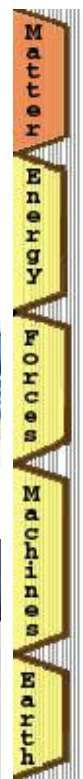


Teachers and students, be sure to keep all Chemical and Fire Safety Rules that are specified by your teacher and in all general laboratory experiences.

Remember:

- Always wear your safety glasses when doing this.
- DO NOT breathe in with the straw.
- This explosion has been known to throw the candle along with any melted wax out of the can. Do not leave the candle burning too long before setting off the explosion.

Variations



Use cornstarch, flour, imitation coffee creamer, hot chocolate mixture, or bisquick. Note: Baking soda and baking powder will not work because they are not flammable.



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Updated August 7, 2000 by: [Glen Westbrook](#)

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